
2010 Annual Report: Research Pipeline

News at CIRM:

Keeping the Research Pipeline Fueled

From its inception, CIRM has been invested in pumping fuel—in the form of new researchers and new research ideas—into the research pipeline that leads to new therapies.

This effort includes recruiting top scientists—young and established—to California and to stem cell science, while also funding the basic studies that lead to new ways of understanding and eventually treating disease.

Recruiting the Brightest

CIRM aimed its earliest rounds of funding at creating a robust stem cell research community in California to attract new stem cell investigators to the state. This began with its first ever grants for training in 2006 and continued with its Jump Start Program in 2007, which included SEED grants to bring new investigators and innovative ideas to the field, Comprehensive Grants to support mature projects by researchers with a track record in stem cell research, and Shared Labs to provide critical infrastructure and training in human embryonic stem cell use.

The strategy clearly worked. CIRM has documented 102 faculty-level stem cell scientists who have moved to California from other states and other nations since 2006. Thirty-nine of those are senior level faculty regarded as leaders in the field.

Joanna Wysocka, a Stanford researcher who won the Outstanding Young Investigator Award at this year's meeting of the International Society for Stem Cell Research cited the CIRM SEED program for bringing her into stem cell research.

This year CIRM poured more fuel into the pipeline when it launched the Research Leadership Awards, which help recruit established or emerging leaders in stem cell science. The grants provide six years of salary and research support intended to enable these researchers to pursue highly innovative projects. The first Leadership Award went to the Sanford-Burnham Medical Research Institute to aid in recruiting Robert Wechsler-Reya, a thought leader in neural development and cancer stem cells from Duke University.

Fundamentals Foster Cures

Throughout its existence CIRM has funded research that addresses fundamental questions about what makes a stem cell a stem cell and what pushes some of them to mature into very specific tissues. This year the agency funded 16 Basic Biology II Grants for a total of \$22.4 million, creating fodder for future therapies. (See all CIRM Basic Biology Awards.)

In addition to opening up new avenues of research, this fundamental work can help therapies already well along the pipeline, according to CIRM president Alan Trounson. "We expect many of these outstanding projects to provide answers that remove road blocks to projects that are already close to the clinic."

The Basic Biology II Grants run the gamut of human development. One seeks to turn immature "pre-egg" follicles in the ovaries removed from cancer patients into mature eggs that could be used for nuclear transfer—so-called therapeutic cloning. Obtaining sufficient eggs has held back this line of research. Another grant is looking at aging and the possibility of using systemic proteins, which are found abundantly in young brains but less so in older ones, to try to make older brains more able to re-grow neural tissue.

A Foundational Hurdle

"In writing Proposition 71, we anticipated the need to overcome the immune response in order to fulfill one of the ultimate promises of regenerative medicine," said Robert Klein, Chair of the CIRM Governing Board.

By issuing \$25 million for 19 Stem Cell Transplantation and Immunology Awards, the agency made significant strides toward achieving this goal. (See all Stem Cell Transplantation and Immunology Awards here.) These unique awards force stem cell scientists to form partnerships with transplant immunologists in order to apply for the awards.

"It has significant value to have some of the world's leading stem cell scientists being part of a team with some of the world's leading immunologists," said CIRM Governing Board member Jeff Sheehy just prior to the board vote on the grants.

Two California stem cell teams availed themselves of CIRM's international Collaborative Funding Partner Program to find immunologist collaborators at a hotbed of immunology research: Monash University, in the Australian state of Victoria. The Victorian government has committed \$1.2 million to fund the work on these projects in Australia.

FULL CYCLE FOR DIABETES

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